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ABSTRACT

A common command language has been proposed for use by systems designers and those developing new user interfaces. There is controversy over the appropriateness of a standard command language, and those who are working in artificial intelligence believe that natural language interfaces will make it unnecessary for users to learn such a language, while systems developers and those working on gateway systems welcome a standard command language because it will make system linkages easier both for systems developers and for users. The NISO (National Information Standards Organization) Subcommittee Z39G was established to specify a common command language applicable to all types of machine readable data for use with databases. The intent was to define a vocabulary and syntax without specifying the operation of the underlying system. The language uses simple everyday English words, usually verbs, with a minimum of punctuation. The draft Command Language Standard is presented in this paper together with comments on the approach and the resulting language. (Author/MES)

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THE COMMON COMMAND LANGUAGE

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A Common Command Language has been proposed for use by systems designers and those developing new user interfaces. While controversy has raged over the appropriateness of a standard command language and those who are working in artificial intelligence believe that natural language interfaces will make it unnecessary for users to learn such a language, systems developers and those working on gateway systems welcome a standard command language because it will make system linkages easier both for systems developers and for users. The draft Command Language Standard proposed by the NISO Z39G Committee is presented with comments on the approach and the resulting language.

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The need for a common command language first began to be discussed in the late 1970's and early 1980's when the number of online catalogs and remote database services had increased to the point where it was becoming difficult for even a well-trained online searcher to keep all the commands and syntax straight. Systems developers were less enthusiastic. They urged that a move to standardize too soon would hamper development and that no one would follow a standard anyway. However, as new systems have continued to appear and older ones have evolved and changed to meet public demands, some concensus is emerging with respect to the features these systems must support and a search dialogue that works well for users. In addition, there is great interest in linking systems. The Linked Systems Project, or LSP as it is called, is a program that will support transfer of bibliographic and authority records among the Library of Congress (LC), the Research Libraries Group (RLG), the Online Computer Library Center (OCLC) and the Western Library Network (WLN). There is also great interest in providing gateways that will allow users to connect to multiple remote systems running in different environments using a common command language.

The NISO Subcommittee G was established to specify a common command language for use with databases. The committee was chaired by Charles Hildreth (READ, Ltd.). Members of the committee are Wilhelm Bartenbach (H.W. Wilson Company), Harry F. Boyle (Chemical Abstracts), Emily Fayen (University of Pennsylvania), Katherina Klemperer (Dartmouth College), Richard Marcus (MIT), Joseph Matthews (Inlex, Inc.), Margaret Morrison, (University of Arkansas), Lynne Neufeld, (Telebase Systems, Inc.) and Lawrence Woods (McDonnell Douglas Computer Systems). The intent of the committee was to identify a group of commands to be supported and to define a vocabulary and syntax without specifying the operation of the underlying system. Therefore, what the proposed standard does <u>not</u> contain is perhaps as important as what it does describe:

- The list of commands that are included in the standard are neither a minimal set nor are they exhaustive. That is, a system may contain more commands and features than are included in the standard. It may also choose not to implement certain commands or features described in the standard. However, to be in compliance, the system must at the very least recognize the command words specified in the standard and display a message indicating that the feature has not been implemented, or some other appropriate message to the user.

- The standard does not specify the field names or options to be used. Instead, it defines the commands in terms of the types of qualifications and options that ought to be offered. It is then left to the systems designers to decide which specific field names, options, etc. are appropriate in a given application.

- The standard is not limited to bibliographic data, and in fact, is not limited to text data files, but is intended to be

applicable to all types of machine-readable data.

The goal of establishing a common command language is to create an environment that is as comfortable for the online system user as a rental car. Virtually all makes of cars are slightly different, but they share common features such as the shift pattern that make it possible for anyone to get in a car and drive it away. The same sort of easy transition from one environment to another is the main purpose of a common command language.

A few assumptions guided the Committee in its work to develop the draft standard, Z39.58-198X. These are:

- Use simple, everyday English words as command names. Use verbs whenever possible.
- Keep punctuation to a minimum, and where necessary, keep it as simple as possible.
- Commands may be abbreviated by truncating from the right. All commands have a three-letter unique abbreviation, but an abbreviation of one or two letters is sufficient if it is unique.
- If a tradeoff is needed, make things easier for the user and harder for the parser.
- Some details are matters of implementation and not part of the standard. Procedures for correcting mistakes on the screen (is it the backspace key, the rubout, the delete key or something else?); for entering data (is it the Send, Return, or Enter key?); and for paging back and forth in the display (is it the up arrow or the page up key?) are not part of the standard.

The commands are:

EXPLAIN <topic> - provides session-independent explanation of the system, its use, and its database(s)

EXPLAIN commands
EXP databases

HELP - has no options, provides context-specific help.

START - used to initiate a session. Purges the results of a previous session and resets default parameters.

STOP - to end a session. Specific logoff details are system-specific.

CHOOSE <file1> [filen] ... - to select one or more files or databases for searching.

CHOOSE medline

FIND [q1][,q2][...] <term> [[<operator><term>]| [<operator> [q1]...<term>]...

- the basic search command

FIND au Frost
FIND su,ti acid rain and forest$1

SCAN [q][term] - used to begin display of a list of terms

SCAN su biology

RELATE [q1][,q2] <term> - displays terms logically related to the specified term

RELATE tranquilizers

DISPLAY [s#][r#][,r#][range][option] - displays records retrieved by the search specified, record(s) specified, and format specified (if any). If nothing is specified, the system defaults will apply.

DISPLAY 5 1,5,10-20 LONG

PRINT [q#][r#][,r#] [range][option] - used to print search results offline.

PRINT 1-10 BRIEF

SORT <sortvalue1>[sortvalue2...][s#][r#][,r#][range][order] - used to sort search results according to specified field value(s)

SORT 7 au,ti

MORE [n]|[np] - to move forward through the displayed data

MOVE 5

BACK [n][np] - to move backward through the displayed data

BACK 3p

REVIEW [q#][,qn][...] - used to review previously executed search strategies.

REVIEW 1-10

SAVE [Q#] [qname] - used to save search strategies or search results from one session to another.

SAVE S7 mysearch

DELETE <s#>|<ss#>|<m#>|<p#> - used to remove saved search strategies, search result sets, macros, or print requests

DELETE mysearch

SHOW <option> - may be used to display session-dependent information such as default settings, time, news, etc.

SHOW news
SHOW settings

SET <option> - may be used to change session-dependent options such as display format, paging, etc.

SET display long
SET scrolling off

DEFINE <option> <option> - used to rename commands or to set up macros.

DEFINE look display

The proposed common command language standard draft document was distributed for comment during March-May 1986. The comments are being collected by NISO and will be reviwed by the Committee late in 1986.